



# Olfactory Packaging

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# Introduction

Packaging is a critical part of our daily life in a modern consumer society. As the way we live, work and play evolves, packaging has to meet the demands of changing consumption, locations and occasions. The shifting of social landscapes and advances in technology are constantly creating opportunities for brand owners and packaging producers to find new ways to satisfy consumer needs.

Scented packaging seems like an important next step, cementing brand identity and demonstrating product quality. It is a significant emerging trend and it is getting a lot of attention. 'Olfactory packaging', to use the upscale term, adds guaranteed shelf appeal to products. Recent research conducted by *The New York Times* revealed that consumers were much more willing to purchase items when they could see, and smell, them.

So it comes as no surprise that marketers, packaging and technology suppliers are trying to exploit our sense of smell by adding a new dimension to packaging.



# Olfactory Packaging

Olfactory packaging refers to packaging that appeals to the sense of smell. Scented and aromatic oils are embedded into capsules and are integrated into a label, plastic package or printable ink that releases scent. Some technologies require touch for the smell to be activated, whereas others using slightly different encapsulation technologies release an on-going smell.

Primary and secondary packaging can be fragranced as well as the labelling. Main options include:

- Fragranced plastic parts (bottle, cap, ...),
- Fragranced ink,
- Fragranced varnish,
- Fragranced labels/seals,
- Fragranced blown films/surface protection films.



# Scented Plastic





## Eastman *Tenite*

Created essentially from wood pulp, the natural fibres of Eastman's *Tenite* cellulosics craft a soft feel and produce a unique woody sound.

*Tenite* cellulosic plastics are versatile and durable and are noted for their excellent balance of properties - toughness, hardness, strength, surface gloss, clarity, chemical resistance, and warmth to the touch.

Products made of *Tenite* cellulosic plastics are also easily molded, extruded, or fabricated and available in a wide range of colours.

Probably the most unique capability of Cellulosics is its **suitability for scent encapsulation**, which is far superior and longer lasting than with any other polymer.

<http://www.eastman.com>



# Cellulosics

## **Compatibility:**

The composite of Cellulosics, particularly Cellulose Acetate is ideally suited to use for scented plastic. One of the major components of Cellulose Acetate is the same as a key ingredient used to make most fragrances and aromas.

## **Breath-ability:**

Cellulosics take on and give off moisture hygroscopically - with the interaction of air and moisture, fragrance is continuously released from the material.

**Longevity:** Perhaps the major benefit of using Scented Cellulosics is that the encapsulated fragrance will be emitted for a long period of time, up to 20 years, due to this inherent breathe-ability.



## Eastman Scented Pebbles

Eastman's scented cellulosic materials give designers the opportunity to incorporate the sense of smell into their work. Available scented, unscented and in a variety of colours, Eastman's palm-of-your-hand sized "pebble" samples are the first phase of the Material Difference program for the design community. Designers wanting samples of Eastman's cellulosic plastic can now get a multicoloured set of pebbles that demonstrate the material's unique tactile and scented qualities. The scented pebbles were developed in collaboration with **Rotuba Extruders**, which has in-depth expertise in encapsulating fragrance and **Givaudan**. They created a lot of buzz in the packaging and HPC industries.

Each pebble is made of two fitted halves, allowing designers to mix and match seemingly endless colour and fragrance options made possible with cellulose.

<http://www.rotuba.com>





# Rotuba: Scented Product Examples

## 1. Cosmetics

From cosmetics caps to wrap



## 3. Tools

Durable, and gives a great finish



## 5. Toys

Scent as a learning aid



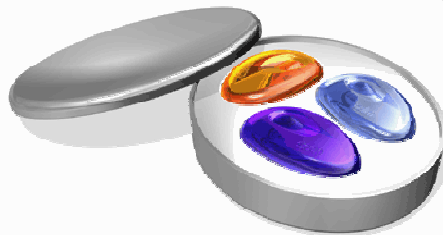
## 4. Jewelry

Scented costume jewelry



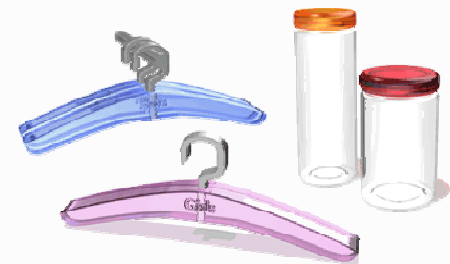
## 2. Promotional

Differentiate from the crowd



## 6. Home and Kitchenware

Great fragrances in the home



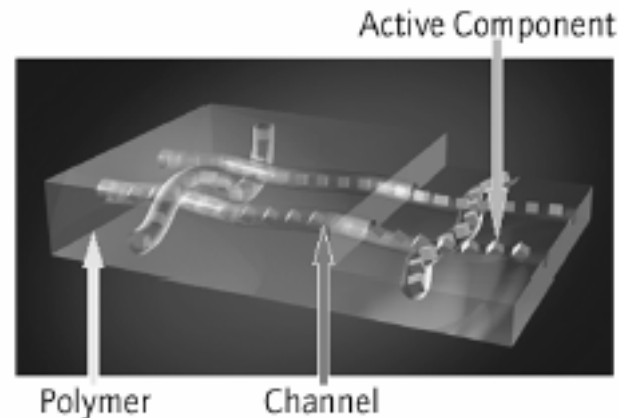




## CSP Technologies Activ-Pak™

CSP Technologies, based in the US, engineers aroma-emitting and aroma-absorbing packages but has far more demand for the aroma-absorbing packages. The company engineers the polymers to control small molecule transport, such as aromas, through the materials. The scent emitted from a technology such as CSP's is on-going and does not rely on activation from the consumer.

CSP Technologies' three-component plastic with active component allows aromas to be controlled through materials



<http://www.csptechnologies.com>



## ScentSational's Aroma-enhanced Packaging

When looking to the future of olfaction packaging you cannot look past the pioneering work ScentSational Technologies is doing. The US-based company is not only using the technology of integrating flavoured-aromas into plastic packaging as a marketing tool, but also as a flavour enhancer, flavour scalper, and to increase head-space aroma.

ScentSational's CompelAroma® Brand Building Technology lets the products **smell better, taste better...** and, ultimately, **sell better.**

"Finally a marketing tool that make sense and appeals to the senses."





## **ScentSational's Aroma Release <sup>TM</sup>**

ScentSational utilizes its patented and proprietary Encapsulated Aroma Release<sup>TM</sup> technology to incorporate FDA-approved food grade FEMA-GRAS (Generally Recognized As Safe) flavours directly into food and beverage packaging components and fragrances into consumer products packaging. As a result, the packaging actually becomes aromatised. This, in turn, dramatically enhances the product inside and the overall consumer experience.

ScentSational technology can be applied to all existing manufacturing methods, including blow moulding, injection moulding, thermoforming, extrusion and in gaskets and liners. No new tooling is required to implement ScentSational technology making it very cost effective and highly scalable.



## ScentSational's Partners

ScentSational has carefully selected its Strategic and Manufacturing Partners from among the leading companies in the fields of injection molding, thermoforming, extrusion and flexible packaging:



Seaquist Closures is a leading designer and manufacturer of dispensing closures and systems



One of the world's leading packaging company producing closures, cans and specialty packaging



Portola Packaging is one of the America's largest closure manufacturers



Precise is a leading, full-service injection moulder of precision plastic components and assemblies



Largest thermoformer of polypropylene for food packaging in North America



Global manufacturer of active and protective packaging solutions, including polymer packaging, desiccants, packaged absorbents, absorbent polymers, humidity and liquid indicator products and customized solutions.



Americas' largest flexible packaging company



Leading producer of value-added film and flexible packaging products



One of the top five consumer packaging companies in the world

and... **Firmenich**



## Fragranced Masterbatch

Several specialty companies offer fragranced additives in a form that is easily integrated into virtually any plastic manufacturing processing.

Major suppliers include:

<http://www.polyvel.com> (US)

<http://www.addmaster.co.uk> (UK)

<http://www.beggandco.com/> (UK, Kent)

<http://www.epronindustries.com> (UK)

<http://www.kelly.com.tw> (Taiwan)

Most concentrates are sold in free flowing pellet or powder form.

The technologies are usually based on the controlled migration and release of fragrance from a polymer matrix.





# **Scented Inks & Varnishes**





## Scentsphere's RubN'Sniff Inks

Scentsphere is a relatively new company, and it is affiliated with Flint ink, the world's largest privately owned ink manufacturer, and FOLCOScent, one of the leading supplier in the field of fragrance marketing.

Scentsphere uses a robust **microencapsulation technology**, based on a patented synthetic polymer, to create a **clear printable ink**.

RubN'Sniff inks can be used for packaging and labelling applications as on promotional tools and can be applied by a standard printer. The inks can be run in-line for offset, flexo, and gravure print applications. The technology is unique because it can be printed directly onto the package. Rigorous testing assures that the scented inks withstand heat, pressure, humidity, and other printing and converting stresses. Once RubN'Sniff is applied to a printed surface, there is virtually no pre-release of scent until activated. Scent is released by gently rubbing the printed surface. Since there is a high concentration of capsules on the printed surface, the printed area can be rubbed many times with scent being released each time.

<http://www.flintink.com>  
<http://www.folcoscent.de>

NB: Unilever used that technology in Germany.



## Ronald T. Dodge Company

Ronald T. Dodge Company is a leader in microencapsulation and controlled release technology thanks to its multiple industry experience and application know-how. By using various techniques and methods, the Dodge Company has successfully encapsulated more than 600 types of materials.

One of the company's division, Dodge marketing, is a premier supplier of scented inks for fragrance promotional material. Its portfolio includes Scratch-n-Sniff, Snap-n-Burst, Peel-n-Reveal and MicroVarnish® technologies.

### **MicroVarnish®:**

MicroVarnish® allows to not only delivery the desired fragrance rendition, it also provides an economic approach for promotional needs. The press ready water-based varnish is formulated to run on with various applications. It is supplied as a slurry ~50%. Capsules are < 80 microns in size.

<http://www.rtdodge.com>

<http://www.scented-ink.com>





## Lipo Technologies' TransluScent™

Lipo Technologies Inc. is a company highly specialised in delivery systems and a leader in the field of microencapsulation and controlled release. Lipo Technologies offers InstaScent™ (Scratch & Sniff), Snap & Burst™ printing slurry and TransluScent™, a scented varnish.

TransluScent™ can be formulated in water or solvent based versions. Microencapsulated fragrance oils are incorporated into conventional varnish formulations. Materials are supplied to printers in press ready form or as a powder that can be mixed into your own binder system.

Application: TransluScent™ is applied as any varnish, after ink application, but before drying ovens. The TransluScent™ formulation is applied by utilizing many different printing techniques, but the most common are flexo, offset web, sheet fed, and gravure.

<http://www.lipotechnologies.com/printing.htm>



## Arcade's AromaLacquer™

AromaLacquer™ is a cost effective scent sampling technology that suspends micro-capsules in a proprietary, scented varnish system which, when rubbed, delivers accurate olfactory fragrance trial. Primary application is for gravure and offset web-printed promotional materials.

<http://www.arcadeinc.com/index.cfm?page=3.1007>





# Scented Labels & Seals





## Scratch & Sniff Labels

Scratch and sniff refers to a product that has aromatic droplets encapsulated in it and is activated through touch.

Traditional uses of the scratch and sniff label have been liquor and perfume. But more recently food, beverage, health and beauty care brands are also using the labels to influence consumers' purchases. The technology is also used to prevent consumers from tampering with the pack to smell the product as it is already available to them on the outside of the pack.

The scratch and sniff label is not a new technology and the concept has been around for more than 30 years. However, as demand for the technology is growing there is increasing competition among olfactory sample suppliers and as a result there is now a variety of sample systems available.



## Case Study: P&G Crest Toothpaste

Procter and Gamble in the US has recently put a scratch-and-sniff label on its Whitening Crest toothpaste range. The label emits a smell representing each flavour of toothpaste – Cinnamon Rush, Fresh Citrus Breeze and Extreme Herbal Mint. The company is using the labels in an intensive marketing campaign to create an increased brand awareness of the product. The label feature on direct-mail outs, magazine advertisements and the package itself. Procter & Gamble are using the label in a move to give the product a unique identity on the shelf edge by demonstrating that it not only smells good but that it tastes good too.





## Labels & Sampling Solutions Providers

Driscoll Labels, based in the US, provide a range of label solutions to customers, including the scratch-and-sniff labels. The labels are customised and Driscoll provides the technology for a range of products. Driscoll says the labels can last indefinitely and claims they can still emit smell ten years on.

The company's biggest market for scratch-and-sniff is the fragrance industry which uses the labels to market their perfumes, but its clientele also includes health and beauty, restaurants, children's books and toys and candles. Labels are very economic and cost under \$0.01 when supplied in large quantities.

<http://www.driscolllabel.com>

Other suppliers of innovative fragrance sampling solutions include:

<http://www.arcadeinc.com>

<http://www.orlandi-usa.com>

<http://www.vertisinc.com>

<http://www.folcoscent.de>

<http://www.aromaco.co.uk>



# Fragranced Film

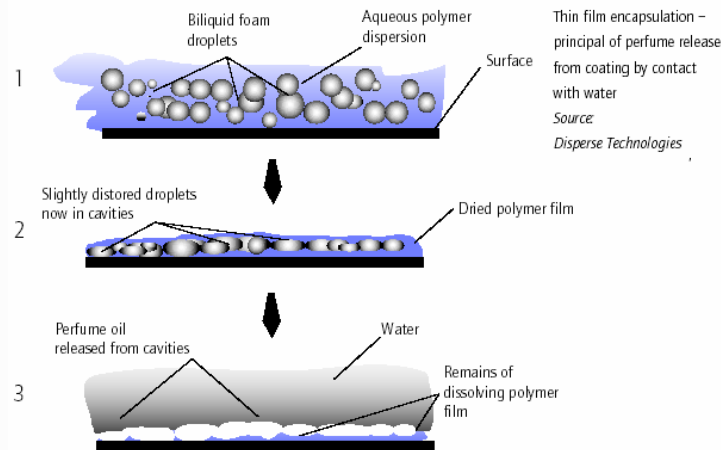




## Disperse Technologies' TFE

UK-based Disperse Technologies, a company that provides film and coating technologies, has developed a controlled-release technology that can trap any kind of oil-soluble scent into a polymeric film coating. The company's thin film encapsulating (TFE) technology can be used to apply a smell to a number of board and paper applications. TFE creates a controlled release that may be stimulated by many mechanisms and thus has applications in many sectors. TFE is a fast, easy and highly cost competitive alternative to conventional micro-encapsulation.

Example:



[http://www.disperseplc.com/archive/consumer/Technology\\_TFE.pdf](http://www.disperseplc.com/archive/consumer/Technology_TFE.pdf)





## Scented films

Scented films have been around for quite some time and they have essentially been used for fragranced bin liners but films producers now offer an array of scented solutions, from stretch films to custom flexible packaging.

Examples of such manufacturers include:

- In the UK, Britton Taco: <http://www.brittontaco.com>
- In the US, Tyco Plastics: <http://www.tycoplastics.com>

On top of that Charter Films, a leading US manufacturer of plastic films, which produces an extensive list of mono layer and multi-layer coex films for various markets and applications, is said to have partnered with [ScentSational Technologies](http://www.scentsationaltechnologies.com).

<http://www.charterfilms.com/>



# Conclusion

Packaging traditionally uses vision and touch to connect emotionally with consumers. Now there are technologies to also appeal to the most emotive sense of all – the sense of smell.

In the area of olfactory packaging, Quest is obviously behind its main competitors. Givaudan and Firmenich have teamed up with two leading companies in the field, respectively Eastman and ScentSational Technologies, while IFF has its own technology platform: PolyIFF.

At first glance the concept of smelly packaging seems fun, different and a novel way of reaching consumers. However, several suppliers of the technology point out a number of barriers standing in the way of olfactory packaging well and truly taking off. Too many smells is not always a good thing. Retailers are dubious about the number of smells that could end up cluttering the shelves and having a negative effect on customers.